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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/689,173

10/20/2003

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HO-P02142US2

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02/08/2005

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EXAMINER

GURZO, PAUL M

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

HA

Office Action Summary	Application No. 10/689,173	Applicant(s) FUHRER ET AL.	
	Examiner Paul Gurzo	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on ____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-12 is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) ☒ Claim(s) 1-6 is/are allowed.

6) ☒ Claim(s) 7-12 is/are rejected.

7) ☐ Claim(s) ____ is/are objected to.

8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>0504</u> .	6) <input type="checkbox"/> Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clemmer et al. (5,905,258) in view of Bateman et al. (6,229,142).

Regarding claims 7 and 10, 258 teaches an apparatus and method for determining a profile of ions comprising an ion source (74), a fragmentation device (col. 14, lines 42-57), an ion extractor (40), a time-of-flight mass spectrometer (36) fluidly coupled to and accepting the ions from the extractor, an ion detector (116), a timing controller (38), and a data processing unit that is capable of controlling the instrument (30) (col. 6, lines 13-41 and col. 8, lines 6-13 and Fig. 4). Clemmer further teaches an ion source that is under computer control (38) to control the generation of ions from the ion source (74), and this computer has knowledge of the times at which the ions were introduced into the IMS (34). They further teach that the numerous grid or plates (86, 94, and 102) are also under computer control, and it is obvious that these grids or plates act as an extractor to introduce the ions to the detector (116) (col. 7, line 33 - col. 8, line 2 and col. 9 line 9 - col. 10, line 27). They teach that this detector is operable to detect arrival times of the ions thereat and provide signals corresponding thereto to computer (38) via signal path (124). Therefore, this computer or data processing unit is in electronic communication with the ion source, ion extractor and ion detector as depicted in Fig. 4).

Clemmer et al. does not explicitly teach that time offset is used, but it is obvious that the computer control (38) and grids (86, 94, and 102) act to offset the times of the generated ions that are extracted. In addition, Bateman et al. teaches a timing controller (30) that is in communication with a pulse generator (22) and clock generator (29) that are in communication with the ion source (2) (Fig. 1). These generators will generate pulses in such way that bunches of ions are repeatedly ejected (col. 7, line 47 - col. 8, line 42). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Clemmer et al. so that a predetermined sequence is used because this will lead to an increased dynamic range of the detector.

Regarding claims 8, 9, 11, and 12, 258 teaches that the computer (38) is in communication with the IMS (34), and it is in the IMS (34) that the ion fragmentation occurs (col. 14, lines 42-57 and Fig. 4). Fig. 4 clearly shows that the fragmentation occurs within or at a location before the ion extractor (40). In addition, it is obvious that the time characteristic analysis in the prior art uses the step of time activation of the fragmenting because the timing controller (38) is in communication with the fragmenting means (34) and the detector (116) which will feed the needed information to the controller (38) for the desired fragmentation.

Allowable Subject Matter

Claims 1-6 are allowed.

The closest prior art, Clemmer et al. and Bateman et al., teach an apparatus and method for determining the temporal profile of fast ion processes comprising an ion source, an ion extractor, a time of flight mass section, a timing controller to control the activation of the ion source and extractor, and a data processing unit. However, they do not teach that the ion detector

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is a position sensitive one. In fact, Bateman et al. explicitly teach that it is not position sensitive. Because the detector is not position sensitive, the data processing unit will not act in the same manner as the claimed invention.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mullock (5,563,410)

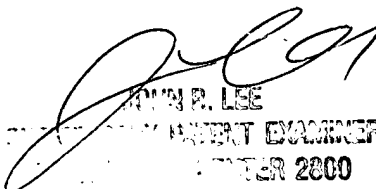
Becker et al. (6,031,227)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (571) 272-2472. The examiner can normally be reached on M-Fri. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached at (571) 272-2477. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

PMG
January 28, 2005


JOHN R. LEE
PATENT EXAMINER
JAN 28 2005